

Sequence Listing

<110> Botstein,David

Desnoyers,Luc

Ferrara,Napoleone

Fong,Sherman

Gao,Wei-Qiang

Goddard,Audrey

Gurney,Austin L.

Pan,James

Roy,Margaret Ann

Stewart,Timothy A.

Tumas,Daniel

Watanabe,Colin K.

Wood,William I.

<120> Secreted and Transmembrane Polypeptides and Nucleic
Acids Encoding the Same

<130> P2930R1C10

<150> 60/095,325

<151> 1998-08-04

<150> 60/112,851

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<150> 60/115,733

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<150> 60/119,341

<151> 1999-02-09

Patent & Trademark Office

<151> 2000-03-03

<150> PCT/US99/12252

<151> 1999-06-02

<150> PCT/US99/28634

<151> 1999-12-01

<150> PCT/US99/28551

<151> 1999-12-02

<150> PCT/US00/03565

<151> 2000-02-11

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<150> PCT/US00/15264

<151> 2000-06-02

<150> PCT/US00/32678

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<141> 2001-05-25

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 35 40 45
 Phe Ala Ile Ala Arg Arg Leu Ala Gln Asp Gly Ala His Val Val
 50 55 60
 Val Ser Ser Arg Lys Gln Gln Asn Val Asp Gln Ala Val Ala Thr
 65 70 75

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Gly	Lys	Ala	Glu	Asp	Arg	Glu	Arg	Leu	Val	Ala	Thr	Ala	Val	Lys	95	100	105
Leu	His	Gly	Gly	Ile	Asp	Ile	Leu	Val	Ser	Asn	Ala	Ala	Val	Asn	110	115	120
Pro	Phe	Phe	Gly	Ser	Ile	Met	Asp	Val	Thr	Glu	Glu	Val	Trp	Asp	125	130	135
Lys	Thr	Leu	Asp	Ile	Asn	Val	Lys	Ala	Pro	Ala	Leu	Met	Thr	Lys	140	145	150
Ala	Val	Val	Pro	Glu	Met	Glu	Lys	Arg	Gly	Gly	Gly	Ser	Val	Val	155	160	165
Ile	Val	Ser	Ser	Ile	Ala	Ala	Phe	Ser	Pro	Ser	Pro	Gly	Phe	Ser	170	175	180
Pro	Tyr	Asn	Val	Ser	Lys	Thr	Ala	Leu	Leu	Gly	Leu	Thr	Lys	Thr	185	190	195
Leu	Ala	Ile	Glu	Leu	Ala	Pro	Arg	Asn	Ile	Arg	Val	Asn	Cys	Leu	200	205	210
Ala	Pro	Gly	Leu	Ile	Lys	Thr	Ser	Phe	Ser	Arg	Met	Leu	Trp	Met	215	220	225
Asp	Lys	Glu	Lys	Glu	Glu	Ser	Met	Lys	Glu	Thr	Leu	Arg	Ile	Arg	230	235	240
Arg	Leu	Gly	Glu	Pro	Glu	Asp	Cys	Ala	Gly	Ile	Val	Ser	Phe	Leu	245	250	255
Cys	Ser	Glu	Asp	Ala	Ser	Tyr	Ile	Thr	Gly	Glu	Thr	Val	Val	Val	260	265	270
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<223> Synthetic Oligonucleotide Probe

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<213> Artificial Sequence

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<212> DNA
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Leu	Met	Gln	Glu	Lys	Thr	Gly	Leu	Glu	Ser	Lys	Arg	Leu	Arg	Ser
				440					445					450
Ser	Gln	Ala	Leu	Asn	Glu	Asp	Ile	Val	Arg	Val	Ser	Ser	Arg	Leu
				455					460					465
Glu	His	Leu	Glu	Lys	Glu	Leu	Ser	Glu	Lys	Ser	Gly	Gln	Leu	Arg
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Gln	Gly	Ser	Ala	Gln	Ser	Gln	Gln	Gln	Ile	Arg	Gly	Glu	Ile	Asp
				485					490					495
Ser	Leu	Arg	Gln	Glu	Lys	Asp	Ser	Leu	Leu	Lys	Gln	Arg	Leu	Glu
				500					505					510
Ile	Asp	Gly	Lys	Leu	Arg	Gln	Gly	Ser	Leu	Leu	Ser	Pro	Glu	Glu
				515					520					525
Glu	Arg	Thr	Leu	Phe	Gln	Leu	Asp	Glu	Ala	Ile	Glu	Ala	Leu	Asp
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Ala	Ala	Ile	Glu	Tyr	Lys	Asn	Glu	Ala	Ile	Thr	Cys	Arg	Gln	Arg
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Val	Leu	Arg	Ala	Ser	Ala	Ser	Leu	Leu	Ser	Gln	Cys	Glu	Met	Asn
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Leu	Met	Ala	Lys	Leu	Ser	Tyr	Leu	Ser	Ser	Ser	Glu	Thr	Arg	Ala
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Leu	Leu	Cys	Lys	Tyr	Phe	Asp	Lys	Val	Val	Thr	Leu	Arg	Glu	Glu
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Gln	His	Gln	Gln	Gln	Ile	Ala	Phe	Ser	Glu	Leu	Glu	Met	Gln	Leu
				605					610					615
Glu	Glu	Gln	Gln	Arg	Leu	Val	Tyr	Trp	Leu	Glu	Val	Ala	Leu	Glu
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Arg	Gln	Arg	Leu	Glu	Met	Asp	Arg	Gln	Leu	Thr	Leu	Gln	Gln	Lys
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Glu	His	Glu	Gln	Asn	Met	Gln	Leu	Leu	Leu	Gln	Gln	Ser	Arg	Asp
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His	Leu	Gly	Glu	Gly	Leu	Ala	Asp	Ser	Arg	Arg	Gln	Tyr	Glu	Ala
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Arg	Ile	Gln	Ala	Leu	Glu	Lys	Glu	Leu	Gly	Arg	Tyr	Met	Trp	Ile
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Asn Gln Glu Leu Lys Gln Lys Leu Gly Gly Val Asn Ala Val Gly
695 700 705

His Ser Arg Gly Gly Glu Lys Arg Ser Leu Cys Ser Glu Gly Arg
710 715 720

Gln Ala Pro Gly Asn Glu Asp Glu Leu His Leu Ala Pro Glu Leu
725 730 735

Leu Trp Leu Ser Pro Leu Thr Glu Gly Ala Pro Arg Thr Arg Glu
740 745 750

Glu Thr Arg Asp Leu Val His Ala Pro Leu Pro Leu Thr Trp Lys
755 760 765

Arg Ser Ser Leu Cys Gly Glu Glu Gln Gly Ser Pro Glu Glu Leu
770 775 780

Arg Gln Arg Glu Ala Ala Glu Pro Leu Val Gly Arg Val Leu Pro
785 790 795

Val Gly Glu Ala Gly Leu Pro Trp Asn Phe Gly Pro Leu Ser Lys
800 805 810

Pro Arg Arg Glu Leu Arg Arg Ala Ser Pro Gly Met Ile Asp Val
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Arg Lys Asn Pro Leu
830

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 Lys Ile Tyr Asn Pro Ser Glu Gln Cys Cys Tyr Asp Asp Ala Ile
 50 55 60
 Leu Ser Leu Lys Glu Thr Arg Arg Cys Gly Ser Thr Cys Thr Phe
 65 70 75
 Trp Pro Cys Phe Glu Leu Cys Cys Pro Glu Ser Phe Gly Pro Gln
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 Gln Lys Phe Leu Val Lys Leu Arg Val Leu Gly Met Lys Ser Gln
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<210> 11
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<212> PRT
<213> Homo sapiens

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35 40 45
Glu Lys Arg Glu His Ala Thr Arg Asp Gly Pro Gly Arg Val Asn
50 55 60
Glu Leu Gly Arg Pro Ala Arg Asp Glu Gly Gly Ser Gly Arg Asp
65 70 75
Trp Lys Ser Lys Ser Gly Arg Gly Leu Ala Gly Arg Glu Pro Trp
80 85 90
Ser Lys Leu Lys Gln Ala Trp Val Ser Gln Gly Gly Gly Ala Lys
95 100 105
Ala Gly Asp Leu Gln Val Arg Pro Arg Gly Asp Thr Pro Gln Ala
110 115 120
Glu Ala Leu Ala Ala Ala Ala Gln Asp Ala Ile Gly Pro Glu Leu
125 130 135
Ala Pro Thr Pro Glu Pro Pro Glu Glu Tyr Val Tyr Pro Asp Tyr
140 145 150
Arg Gly Lys Gly Cys Val Asp Glu Ser Gly Phe Val Tyr Ala Ile
155 160 165
Gly Glu Lys Phe Ala Pro Gly Pro Ser Ala Cys Pro Cys Leu Cys
170 175 180
Thr Glu Glu Gly Pro Leu Cys Ala Gln Pro Glu Cys Pro Arg Leu
185 190 195
His Pro Arg Cys Ile His Val Asp Thr Ser Gln Cys Cys Pro Gln
200 205 210
Cys Lys Glu Arg Lys Asn Tyr Cys Glu Phe Arg Gly Lys Thr Tyr
215 220 225
Gln Thr Leu Glu Glu Phe Val Val Ser Pro Cys Glu Arg Cys Arg

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245	250	255
Gln Thr Glu Cys Val Asp Pro Val Tyr Glu Pro Asp Gln Cys Cys		
260	265	270
Pro Ile Cys Lys Asn Gly Pro Asn Cys Phe Ala Glu Thr Ala Val		
275	280	285
Ile Pro Ala Gly Arg Glu Val Lys Thr Asp Glu Cys Thr Ile Cys		
290	295	300
His Cys Thr Tyr Glu Glu Gly Thr Trp Arg Ile Glu Arg Gln Ala		
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Met Cys Thr Arg His Glu Cys Arg Gln Met		
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<210> 13
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<220>
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<400> 13
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<210> 14
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<220>
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<210> 15
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 <212> DNA
 <213> Homo sapiens

<400> 15

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cccacacaca atcattcata tctactcacc taacagcaac actggggaga 1500
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<210> 16
<211> 437
<212> PRT
<213> Homo sapiens

<400> 16
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His Val Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys
35 40 45
Asn Thr Ser Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met
50 55 60
Leu Ile Glu Ser Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly
65 70 75
Cys Thr Glu Ala Lys Asp Gln Glu Pro Arg Val Thr Glu His Arg
80 85 90
Met Gly Pro Gly Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg
95 100 105
Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp
110 115 120
Ala Pro Gln Pro Pro Ala Asp Pro Gly Ser Leu Arg Cys Pro Val
125 130 135
Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile
140 145 150
Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu
155 160 165
Arg Gly Gly Gly Ile Phe Ser Asn Leu Arg Val Gln Gly Cys Met
170 175 180
Pro Gln Pro Gly Cys Asn Leu Leu Asn Gly Thr Gln Glu Ile Gly
185 190 195
Pro Val Gly Met Thr Glu Asn Cys Asn Arg Lys Asp Phe Leu Thr
200 205 210
Cys His Arg Gly Thr Thr Ile Met Thr His Gly Asn Leu Ala Gln
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Glu Pro Thr Asp Trp Thr Thr Ser Asn Thr Glu Met Cys Glu Val

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Thr	Ser	Thr	Leu	Val	Gly	Thr	Lys	Gly	Cys	Ser	Thr	Val	Gly	Ala	
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Gln	Asn	Ser	Gln	Lys	Thr	Thr	Ile	His	Ser	Ala	Pro	Pro	Gly	Val	
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Leu	Val	Ala	Ser	Tyr	Thr	His	Phe	Cys	Ser	Ser	Asp	Leu	Cys	Asn	
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Ser	Ala	Ser	Ser	Ser	Ser	Val	Leu	Leu	Asn	Ser	Leu	Pro	Pro	Gln	
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Ala	Ala	Pro	Val	Pro	Gly	Asp	Arg	Gln	Cys	Pro	Thr	Cys	Val	Gln	
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Pro	Leu	Gly	Thr	Cys	Ser	Ser	Gly	Ser	Pro	Arg	Met	Thr	Cys	Pro	
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Arg	Gly	Ala	Thr	His	Cys	Tyr	Asp	Gly	Tyr	Ile	His	Leu	Ser	Gly	
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Gly	Gly	Leu	Ser	Thr	Lys	Met	Ser	Ile	Gln	Gly	Cys	Val	Ala	Gln	
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Pro	Ser	Ser	Phe	Leu	Leu	Asn	His	Thr	Arg	Gln	Ile	Gly	Ile	Phe	
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Ser	Ala	Arg	Glu	Lys	Arg	Asp	Val	Gln	Pro	Pro	Ala	Ser	Gln	His	
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Gly	Leu	Ala	Leu	Ala	Pro	Ala	Leu	Trp	Trp	Gly	Val	Val	Cys	Pro	
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 50 55 60
 Leu Ser Gly Pro Glu Ala Pro Trp Arg Asp Pro Glu Leu Leu Glu
 65 70 75
 Gly Thr Cys Thr Pro Val Gln Leu Val Ala Leu Ile Arg His Gly
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 Thr Arg Tyr Pro Thr Val Lys Gln Ile Arg Lys Leu Arg Gln Leu
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 His Gly Leu Leu Gln Ala Arg Gly Ser Arg Asp Gly Gly Ala Ser

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Leu Trp Tyr Ala	Asp Trp Met Asp Gly	Gln Leu Val Glu Lys Gly			
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Arg Gln Asp Met	Arg Gln Leu Ala Leu	Arg Leu Ala Ser Leu Phe			
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Pro Ala Leu Phe	Ser Arg Glu Asn Tyr	Gly Arg Leu Arg Leu Ile			
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Thr Ser Ser Lys	His Arg Cys Met Asp	Ser Ser Ala Ala Phe Leu			
	185	190			195
Gln Gly Leu Trp	Gln His Tyr His Pro	Gly Leu Pro Pro Pro Asp			
	200	205			210
Val Ala Asp Met	Glu Phe Gly Pro Pro	Thr Val Asn Asp Lys Leu			
	215	220			225
Met Arg Phe Phe	Asp His Cys Glu Lys	Phe Leu Thr Glu Val Glu			
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Lys Asn Ala Thr	Ala Leu Tyr His Val	Glu Ala Phe Lys Thr Gly			
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Pro Glu Met Gln	Asn Ile Leu Lys Lys	Val Ala Ala Thr Leu Gln			
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Val Pro Val Asn	Asp Leu Asn Ala Asp	Leu Ile Gln Val Ala Phe			
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Phe Thr Cys Ser	Phe Asp Leu Ala Ile	Lys Gly Val Lys Ser Pro			
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Trp Cys Asp Val	Phe Asp Ile Asp Asp	Ala Lys Val Leu Glu Tyr			
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Leu Asn Asp Leu	Lys Gln Tyr Trp Lys	Arg Gly Tyr Gly Tyr Thr			
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Ile Asn Ser Arg	Ser Ser Cys Thr Leu	Phe Gln Asp Ile Phe Gln			
	335	340			345
His Leu Asp Lys	Ala Val Glu Gln Lys	Gln Arg Ser Gln Pro Ile			
	350	355			360
Ser Ser Pro Val	Ile Leu Gln Phe Gly	His Ala Glu Thr Leu Leu			
	365	370			375
Pro Leu Leu Ser	Leu Met Gly Tyr Phe	Lys Asp Lys Glu Pro Leu			
	380	385			390
Thr Ala Tyr Asn	Tyr Lys Lys Gln Met	His Arg Lys Phe Arg Ser			
	395	400			405

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Met	Leu	Leu	Asn	Glu	Lys	Val	Leu	Pro	Leu	Ala	Tyr	Ser	Gln	Glu	440	445	450
Thr	Val	Ser	Phe	Tyr	Glu	Asp	Leu	Lys	Asn	His	Tyr	Lys	Asp	Ile	455	460	465
Leu	Gln	Ser	Cys	Gln	Thr	Ser	Glu	Glu	Cys	Glu	Leu	Ala	Arg	Ala	470	475	480
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 <212> DNA
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Ala	Val	Asn	Leu	Lys	Ser	Ser	Asn	Arg	Thr	Pro	Val	Val	Gln	Glu	35	40	45	
Phe	Glu	Ser	Val	Glu	Leu	Ser	Cys	Ile	Ile	Thr	Asp	Ser	Gln	Thr	50	55	60	
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Thr	Arg	Arg	Asp	Ser	Ala	Leu	Tyr	Arg	Cys	Glu	Val	Val	Ala	Arg	110	115	120	
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Lys	Asp	Asp	Ser	Gly	Gln	Tyr	Tyr	Cys	Ile	Ala	Ser	Asn	Asp	Ala	215	220	225	
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Leu	Ala	Leu	Ile	Thr	Leu	Gly	Ile	Cys	Cys	Ala	Tyr	Arg	Arg	Gly	260	265	270	
Tyr	Phe	Ile	Asn	Asn	Lys	Gln	Asp	Gly	Glu	Ser	Tyr	Lys	Asn	Pro	275	280	285	
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300

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Leu	Pro	Pro	Arg	Arg	Asp	Ser	Thr	Glu	Ala	Pro	Lys	Pro	Lys	Ser	
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Ser	Pro	Glu	Gln	Pro	Ile	Gly	Gln	Gly	Arg	Ile	Arg	Val	Gly	Thr	
				170					175					180	
Gln	Leu	Arg	Val	Leu	Gly	Pro	Glu	Asp	Asp	Leu	Ala	Gly	Met	Phe	
				185					190					195	
Leu	Gln	Ile	Phe	Pro	Leu	Ser	Pro	Asp	Pro	Arg	Trp	Gln	Ser	Ser	
				200					205					210	
Ser	Pro	Arg	Pro	Val	Ala	Leu	Ala	Leu	Gln	Gln	Ala	Leu	Gly	Gln	
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Glu	Leu	Ala	Arg	Val	Val	Gln	Gly	Ser	Pro	Glu	Val	Pro	Gly	Ile	
				230					235					240	
Thr	Val	Arg	Val	Leu	Gln	Ala	Leu	Ala	Thr	Leu	Leu	Ser	Ser	Pro	
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His	Gly	Gly	Ala	Leu	Val	Met	Ser	Met	His	Arg	Ser	His	Phe	Leu	
				260					265					270	
Ala	Cys	Pro	Leu	Leu	Arg	Gln	Leu	Cys	Gln	Tyr	Gln	Arg	Cys	Val	
				275					280					285	
Pro	Gln	Asp	Thr	Gly	Phe	Ser	Ser	Leu	Phe	Leu	Lys	Val	Leu	Leu	
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Gln	Met	Leu	Gln	Trp	Leu	Asp	Ser	Pro	Gly	Val	Glu	Gly	Gly	Pro	
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Leu	Arg	Ala	Gln	Leu	Arg	Met	Leu	Ala	Ser	Gln	Ala	Ser	Ala	Gly	
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Ala	Leu	Ala	Phe	Arg	Gln	Asp	Leu	Glu	Val	Val	Ser	Ser	Thr	Val	
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Arg	Ala	Val	Ile	Ala	Thr	Leu	Arg	Ser	Gly	Glu	Gln	Cys	Ser	Val	
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Glu	Pro	Asp	Leu	Ile	Ser	Lys	Val	Leu	Gln	Gly	Leu	Ile	Glu	Val	
				380					385					390	
Arg	Ser	Pro	His	Leu	Glu	Glu	Leu	Leu	Thr	Ala	Phe	Phe	Ser	Ala	

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Thr	Ala	Asp	Ala	Ala	Ser	Pro	Phe	Pro	Ala	Cys	Lys	Pro	Val	Val
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Val	Val	Ser	Ser	Leu	Leu	Leu	Gln	Glu	Glu	Glu	Pro	Leu	Ala	Gly
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Gly	Lys	Pro	Gly	Ala	Asp	Gly	Gly	Ser	Leu	Glu	Ala	Val	Arg	Leu
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Gly	Pro	Ser	Ser	Gly	Leu	Leu	Val	Asp	Trp	Leu	Glu	Met	Leu	Asp
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Pro	Glu	Val	Val	Ser	Ser	Cys	Pro	Asp	Leu	Gln	Leu	Arg	Leu	Leu
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Phe	Ser	Arg	Arg	Lys	Gly	Lys	Gly	Gln	Ala	Gln	Val	Pro	Ser	Phe
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Arg	Pro	Tyr	Leu	Leu	Thr	Leu	Phe	Thr	His	Gln	Ser	Ser	Trp	Pro
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Thr	Leu	His	Gln	Cys	Ile	Arg	Val	Leu	Leu	Gly	Lys	Ser	Arg	Glu
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Gln	Arg	Phe	Asp	Pro	Ser	Ala	Ser	Leu	Asp	Phe	Leu	Trp	Ala	Cys
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Ile	His	Val	Pro	Arg	Ile	Trp	Gln	Gly	Arg	Asp	Gln	Arg	Thr	Pro
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Leu	Pro	Leu	Leu	Leu	Ser	Cys	Cys	Cys	Gly	Asp	Asp	Glu	Ser	Val
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Arg	Lys	Val	Thr	Glu	His	Leu	Ser	Gly	Cys	Ile	Gln	Gln	Trp	Gly
				620					625					630
Asp	Ser	Val	Leu	Gly	Arg	Arg	Cys	Arg	Asp	Leu	Leu	Leu	Gln	Leu
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Tyr	Leu	Gln	Arg	Pro	Glu	Leu	Arg	Val	Pro	Val	Pro	Glu	Val	Leu
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Leu	His	Ser	Glu	Gly	Ala	Ala	Ser	Ser	Ser	Val	Cys	Lys	Leu	Asp
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Gly	Leu	Ile	His	Arg	Phe	Ile	Thr	Leu	Leu	Ala	Asp	Thr	Ser	Asp
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Arg Lys Leu Ala	Val Ala His Pro Leu	Leu Leu Arg His Leu
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Pro Met Ile Ala	Ala Leu Leu His Gly	Arg Thr His Leu Asn Phe
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Gln Glu Phe Arg	Gln Gln Asn His Leu	Ser Cys Phe Leu His Val
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Leu Gly Leu Leu	Glu Leu Leu Gln Pro	His Val Phe Arg Ser Glu
755	760	765
His Gln Gly Ala	Leu Trp Asp Cys Leu	Leu Ser Phe Ile Arg Leu
770	775	780
Leu Leu Asn Tyr	Arg Lys Ser Ser Arg	His Leu Ala Ala Phe Ile
785	790	795
Asn Lys Phe Val	Gln Phe Ile His Lys	Tyr Ile Thr Tyr Asn Ala
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Pro Ala Ala Ile	Ser Phe Leu Gln Lys	His Ala Asp Pro Leu His
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Leu Ala Gly Leu	Ser Leu Pro Ser Arg	Asp Asp Arg Thr Asp Arg
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Gly Leu Asp Glu	Glu Gly Glu Glu Glu	Ser Ser Ala Gly Ser Leu
860	865	870
Pro Leu Val Ser	Val Ser Leu Phe Thr	Pro Leu Thr Ala Ala Glu
875	880	885
Met Ala Pro Tyr	Met Lys Arg Leu Ser	Arg Gly Gln Thr Val Glu
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Asp Leu Leu Glu	Val Leu Ser Asp Ile	Asp Glu Met Ser Arg Arg
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Arg Pro Glu Ile	Leu Ser Phe Phe Ser	Thr Asn Leu Gln Arg Leu
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Met Ser Ser Ala	Glu Glu Cys Cys Arg	Asn Leu Ala Phe Ser Leu
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Ala Leu Arg Ser	Met Gln Asn Ser Pro	Ser Ile Ala Ala Ala Phe
950	955	960
Leu Pro Thr Phe	Met Tyr Cys Leu Gly	Ser Gln Asp Phe Glu Val
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Val Gln Thr Ala	Leu Arg Asn Leu Pro	Glu Tyr Ala Leu Leu Cys

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985

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Gln Glu His Ala Ala Val Leu Leu His Arg Ala Phe Leu Val Gly
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Leu	Arg	Asp	Arg	Leu	His	Ala	Ala	Glu	Gln	Glu	Ser	Leu	Lys	Arg		50	55	60
Ser	Lys	Glu	Leu	Asn	Leu	Val	Leu	Asp	Glu	Ile	Lys	Arg	Ala	Val		65	70	75
Ser	Glu	Arg	Gln	Ala	Leu	Arg	Asp	Gly	Asp	Gly	Asn	Arg	Thr	Trp		80	85	90
Gly	Arg	Leu	Thr	Glu	Asp	Pro	Arg	Leu	Lys	Pro	Trp	Asn	Gly	Ser		95	100	105
His	Arg	His	Val	Leu	His	Leu	Pro	Thr	Val	Phe	His	His	Leu	Pro		110	115	120
His	Leu	Leu	Ala	Lys	Glu	Ser	Ser	Leu	Gln	Pro	Ala	Val	Arg	Val		125	130	135
Gly	Gln	Gly	Arg	Thr	Gly	Val	Ser	Val	Val	Met	Gly	Ile	Pro	Ser		140	145	150
Val	Arg	Arg	Glu	Val	His	Ser	Tyr	Leu	Thr	Asp	Thr	Leu	His	Ser		155	160	165
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Val	Val	Leu	Ile	Ala	Glu	Thr	Asp	Ser	Gln	Tyr	Thr	Ser	Ala	Val		185	190	195
Thr	Glu	Asn	Ile	Lys	Ala	Leu	Phe	Pro	Thr	Glu	Ile	His	Ser	Gly		200	205	210
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Ser	Arg	Leu	Arg	Glu	Ser	Phe	Gly	Asp	Pro	Lys	Glu	Arg	Val	Arg		230	235	240
Trp	Arg	Thr	Lys	Gln	Asn	Leu	Asp	Tyr	Cys	Phe	Leu	Met	Met	Tyr		245	250	255
Ala	Gln	Ser	Lys	Gly	Ile	Tyr	Tyr	Val	Gln	Leu	Glu	Asp	Asp	Ile		260	265	270
Val	Ala	Lys	Pro	Asn	Tyr	Leu	Ser	Thr	Met	Lys	Asn	Phe	Ala	Leu		275	280	285
Gln	Gln	Pro	Ser	Glu	Asp	Trp	Met	Ile	Leu	Glu	Phe	Ser	Gln	Leu		290	295	300
Gly	Phe	Ile	Gly	Lys	Met	Phe	Lys	Ser	Leu	Asp	Leu	Ser	Leu	Ile		305	310	315
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Ala Gly Lys Ile Gln Lys Leu Lys Asp	Lys Asp Phe Gly Lys Gln	
380	385	390
Ala Leu Arg Lys Glu His Val Asn Pro	Pro Ala Glu Val Ser Thr	
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Ser Leu Lys Thr Tyr Gln His Phe Thr	Leu Glu Lys Ala Tyr Leu	
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cgggcgccca agtaaaagct c 21

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